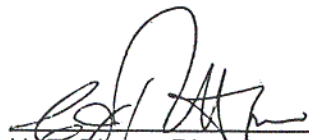



Concurrence:


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4.2.2 Waste Management Project

This project has the lead to ensure waste minimization programs are applied across the Hanford Site in accordance with DOE/RL-91-31, Hanford Site Waste Minimization and Pollution Prevention Program Plan (RL 1997a).

The Mission of the Hanford Waste Management Project is to provide safe, compliant, and cost-effective waste management services for the Hanford Site and DOE complex. These services include solid waste storage, treatment, and disposal and management of liquid effluents. In addition, the Project provides cross-cutting support services including analytical services, waste generator services, transportation and packaging, and waste minimization.

4.2.2.a Project Structure

- Solid Waste Storage & Disposal (RL-WM03)
- Solid Waste Treatment (RL-WM04)
- Liquid Effluents (RL-WM05)
- Analytical Services (RL-WM06)

4.2.2.b Hanford Strategic Plan Goals

The Waste, Material, and Geographic Area Goals contained in the Hanford Strategic Plan (DOE/RL-96-92), represent planning assumptions around which the Hanford Environmental Management effort is structured. Each Mission Area and Project partially support each of these goals, per scope of work described in the Prime Contracts. As an aggregate, all Mission Areas and Projects will fulfill the requirements of the Hanford Strategic Plan. As such, the Goals identified in this section cover only the goals directly supported by that specific Mission Area. Further details are contained in the Project planning documents. As records-of-decision are issued, these Goals will be amended in future revisions of the Hanford Strategic Plan.

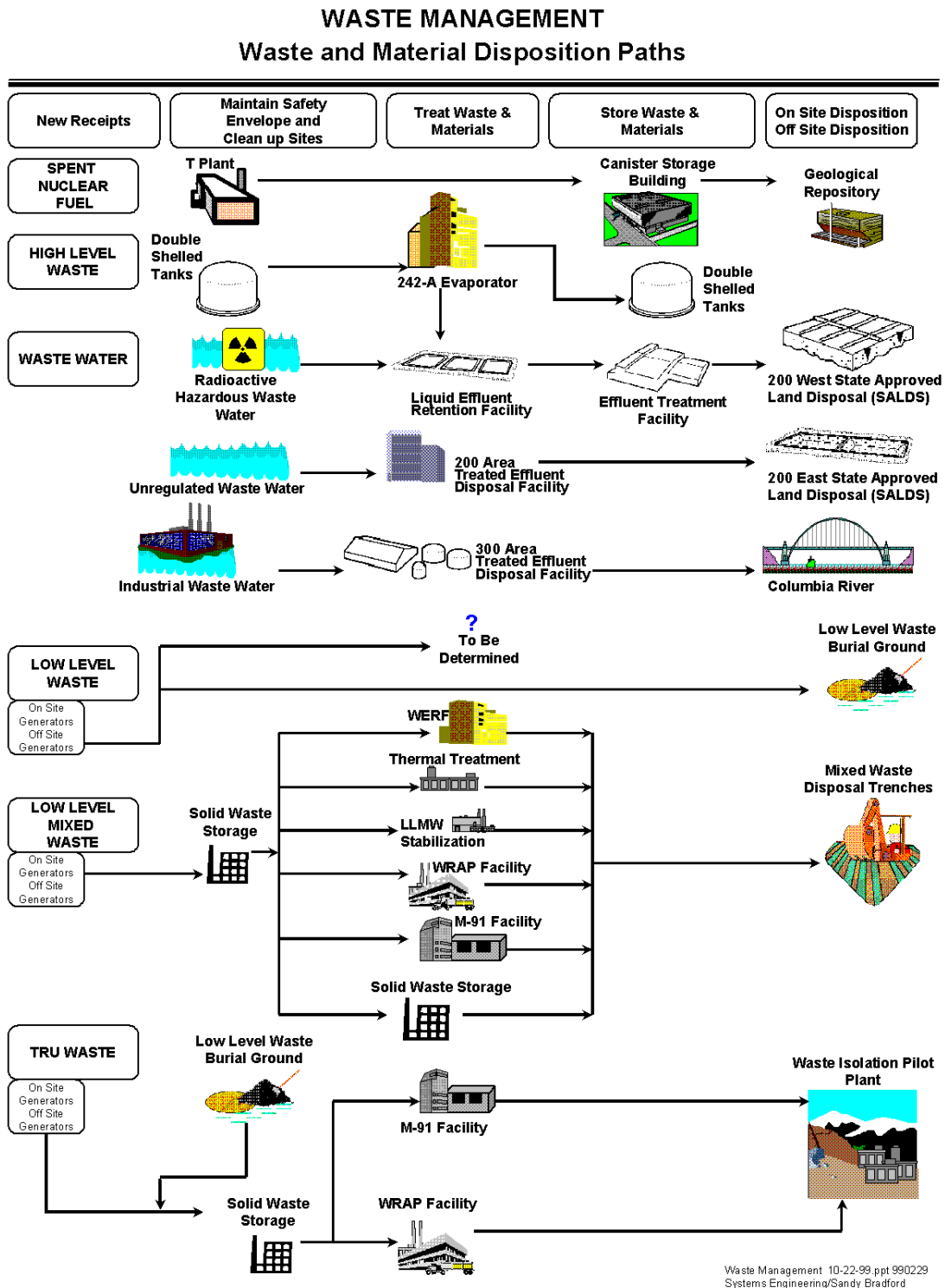
- The 200 Areas and central plateau will be used for the management of nuclear materials and the collection and disposal of waste materials that remain onsite and for other related and compatible uses. Cleanup levels and disposal standards will be established that are consistent with these long-term uses.
- The 300 Area waste sites, materials and facilities will be remediated to allow industrial and economic diversification opportunities. The Federal government will retain ownership of land in and adjacent to the 300 and 400 Areas, but will lease land for private and public uses to support regional industrial and economic development. Excess land within the 1100 Area will be targeted for transition to non-Federal ownership.
- Solid wastes will be dispositioned consistent with national policies for management of transuranic, low level, low level mixed and hazardous wastes. Hanford will continue to receive onsite and offsite wastes for disposal in the 200 Area.

- Safe, stable, secure onsite storage will be provided for all nuclear materials pending decisions on final disposition or until beneficial offsite uses are identified. Facilities without identified future uses will be transitioned to low-cost, stable deactivated conditions (requiring minimal surveillance and maintenance) pending eventual D&D and removal or closure.
- Surplus facilities will be decommissioned and decontaminated sufficiently to enable removal or closure through entombment.
- Spent nuclear fuels will be prepared and packaged as necessary for interim, dry storage onsite, and shipped offsite for disposal in a national repository.

4.2.2.c Technical Logic

Figure 4-3 presents the material flow/logic for the entire Waste Management Project.

Figure 4-3 Waste Management Material/Flow Logic



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4.2.2.d Facility Life-Cycle Responsibility Assignments

Table 4-19 Waste Management Facility Life-Cycle Responsibility Assignments

Asset	Life Cycle Phase						
	Program Planning	Pre-Conceptual	Conceptual	Execute	O&M	Close Out	
						Post Ops	D&D
200 LEF	RL-WM05				RL-WM05		RL-ER02 RL-ER06
242-A Evaporator	RL-WM05				RL-WM05	RL-ER05 RL-TP10	RL-ER06 RL-ER07
242A	RL-WM05				RL-WM05	RL-TP10 RL-TP13	RL-ER06 RL-TP13
242AB	RL-WM05				RL-WM05	RL-TP10 RL-TP13	RL-ER06 RL-TP13
Liquid Effluent Retention Facility	RL-WM05				RL-WM05	RL-ER05 RL-TP10	RL-ER06 RL-ER07
242AL	RL-WM05				RL-WM05		RL-ER06
242AL-42	RL-WM05				RL-WM05	RL-TP10	RL-ER06
242AL-43	RL-WM05				RL-WM05	RL-TP10	RL-ER06
242AL-44	RL-WM05				RL-WM05	RL-TP10	RL-ER06
242AL11	RL-WM05				RL-WM05	RL-TP10	RL-ER06
200 Area Effluent Treatment Facility	RL-WM05				RL-WM05	RL-ER05 RL-TP10	RL-ER06 RL-ER07
2025E	RL-WM05				RL-WM05	RL-TP10	RL-ER06
2025EA	RL-WM05				RL-WM05		RL-ER06
2025EC	RL-WM05				RL-WM05	RL-TP10	RL-ER06
2025EC71	RL-WM05				RL-WM05	RL-TP10	RL-ER06
200 Area Treated Effluent Disposal Facility	RL-WM05				RL-WM05	RL-TP13	RL-TP13
216E-43A	RL-WM05				RL-WM05	RL-TP13	RL-TP13
216E-43B	RL-WM05				RL-WM05	RL-TP13	RL-TP13
225E	RL-WM05				RL-WM05	RL-TP13	RL-TP13
225W	RL-WM05				RL-WM05	RL-TP10	RL-ER06
6653A	RL-WM05				RL-WM05	RL-TP13	RL-TP13
Miscellaneous Streams	RL-WM05				RL-WM05		RL-ER06
200E SALDS	RL-WM05				RL-WM05	RL-TP13	RL-ER06 RL-TP13
200W SALDS	RL-WM05				RL-WM05	RL-TP13	RL-ER06 RL-TP13
242A702	RL-WM05				RL-WM05	RL-TP13	RL-ER06 RL-TP13
242A81	RL-WM05				RL-WM05	RL-TP13	RL-ER06 RL-TP13
PUREX	RL-TP03					RL-ER05 RL-TP03	RL-ER06 RL-ER07
225EC	RL-TP03				RL-WM05	RL-TP13	RL-TP13
T-Plant Canyon Facility	RL-WM04				RL-WM04	RL-ER05 RL-TP10	RL-ER06 RL-ER07
211T	RL-WM04				RL-WM04	RL-TP10	RL-ER06
211T52	RL-WM04				RL-WM04	RL-TP10	RL-ER06
214T	RL-WM04				RL-WM04	RL-TP10	RL-ER06
222T	RL-WM04					RL-TP10	RL-ER06
221T	RL-WM04				RL-WM04	RL-TP10	RL-ER06
221TA	RL-WM04				RL-WM04	RL-TP10	RL-ER06
221TB	RL-WM04				RL-WM04	RL-TP10	RL-ER06
225WA	RL-WM04				RL-WM04	RL-TP10	RL-ER06
231T	RL-WM04				RL-WM04	RL-TP10	RL-ER06
2715T	RL-WM04				RL-WM04	RL-TP10	RL-ER06
2716T	RL-WM04				RL-WM04	RL-TP10	RL-ER06
271T	RL-WM04				RL-WM04	RL-TP10	RL-ER06
277T	RL-WM04				RL-WM04	RL-TP10	RL-ER06
291T	RL-WM04				RL-WM04	RL-TP10	RL-ER06
292T	RL-WM04				RL-WM04	RL-TP10	RL-ER06
2706T Facility	RL-WM04				RL-WM04	RL-ER05 RL-TP10	RL-ER06 RL-ER07

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**Table 4-19 Waste Management Facility Life-Cycle Responsibility Assignments
(Continued)**

Asset	Life Cycle Phase						
	Program Planning	Pre-Conceptual	Conceptual	Execute	O&M	Close Out	
						Post Ops	D&D
2706TA	RL-WM04				RL-WM04	RL-TP10	RL-ER06
2706TB	RL-WM04				RL-WM04	RL-TP10	RL-ER06
M-91 Facility	RL-WM04	RL-WM04	RL-WM04	RL-WM04	RL-WM04	RL-TP10	RL-ER06
Low-Level Mixed Waste Stabilization Contract	RL-WM04	RL-WM04	RL-WM04	RL-WM04	RL-WM04	RL-TP10	RL-ER06
Thermal Treatment Contract	RL-WM04	RL-WM04	RL-WM04	RL-WM04	RL-WM04	RL-TP10	RL-ER06
WRAP	RL-WM04				RL-WM04	RL-TP10	RL-ER06
2336W	RL-WM04				RL-WM04	RL-TP10	RL-ER06
2740W	RL-WM04				RL-WM04	RL-TP10	RL-ER06
2620W	RL-WM04				RL-WM04	RL-TP10	RL-ER06
218W5252	RL-WM04				RL-WM04	RL-TP10	RL-ER06
218W5252A	RL-WM04				RL-WM04	RL-TP10	RL-ER06
Solid Waste Storage	RL-WM03				RL-WM03	RL-TP10 RL-WM03	RL-ER06
Central Waste Complex	RL-WM03				RL-WM03	RL-WM03	RL-ER06 RL-ER07
2120WA	RL-WM03				RL-WM03		RL-ER06
2120WB	RL-WM03				RL-WM03		RL-ER06
2401W	RL-WM03				RL-WM03		RL-ER06
2404WA	RL-WM03				RL-WM03		RL-ER06
2404WB	RL-WM03				RL-WM03		RL-ER06
2404WC	RL-WM03				RL-WM03		RL-ER06
2402W	RL-WM03				RL-WM03		RL-ER06
2402WB	RL-WM03				RL-WM03		RL-ER06
2402WC	RL-WM03				RL-WM03		RL-ER06
2402WD	RL-WM03				RL-WM03		RL-ER06
2402WE	RL-WM03				RL-WM03		RL-ER06
2402WF	RL-WM03				RL-WM03		RL-ER06
2402WG	RL-WM03				RL-WM03		RL-ER06
2402WH	RL-WM03				RL-WM03		RL-ER06
2402WI	RL-WM03				RL-WM03		RL-ER06
2402WJ	RL-WM03				RL-WM03		RL-ER06
2402WK	RL-WM03				RL-WM03		RL-ER06
2402WL	RL-WM03				RL-WM03		RL-ER06
2403WA	RL-WM03				RL-WM03		RL-ER06
2403WB	RL-WM03				RL-WM03		RL-ER06
2403WC	RL-WM03				RL-WM03		RL-ER06
2403WD	RL-WM03				RL-WM03		RL-ER06
209E Pad	RL-WM03				RL-WM03		RL-ER06
2420W	RL-WM03				RL-WM03		RL-ER06
Alkalide Metal Waste Storage Modules	RL-WM03				RL-WM03		RL-ER06
Nonradioactive Dangerous Waste Storage Facility	RL-WM03				RL-WM03	RL-WM03	RL-ER06 RL-ER07
2727W	RL-WM03				RL-WM03	RL-TP10	RL-ER06
616	RL-WM03				RL-WM03		RL-ER06
Solid Waste Disposal	RL-WM03				RL-WM03	RL-ER02	RL-ER02
Low-Level Waste Burial Grounds	RL-WM03				RL-WM03	RL-ER02 RL-WM03	RL-ER02 RL-ER07
Mixed Waste Disposal Trenches	RL-WM03				RL-WM03	RL-WM03	RL-ER02 RL-ER07
222-S Laboratory	RL-WM06				RL-WM06	RL-ER05 RL-TP10	RL-ER06 RL-ER07
207SL	RL-WM06				RL-WM06	RL-TP10	RL-ER06
212S/213S	RL-WM06				RL-WM06	RL-TP10	RL-ER06
219S	RL-WM06				RL-WM06	RL-TP10	RL-ER06
222S	RL-WM06				RL-WM06	RL-TP10	RL-ER06
222SA	RL-WM06				RL-WM06	RL-TP10	RL-ER06
222SB	RL-WM06				RL-WM06	RL-TP10	RL-ER06
222SC	RL-WM06				RL-WM06	RL-TP10	RL-ER06
222SD	RL-WM06				RL-WM06	RL-TP10	RL-ER06
222SE	RL-WM06				RL-WM06	RL-TP10	RL-ER06
222SF	RL-WM06				RL-WM06	RL-TP10	RL-ER06
222SG	RL-WM06				RL-WM06	RL-TP10	RL-ER06
222SH	RL-WM06				RL-WM06	RL-TP10	RL-ER06
225WB	RL-WM06				RL-WM06	RL-TP10	RL-ER06
2716S	RL-WM06				RL-WM06	RL-TP10	RL-ER06

**Table 4-19 Waste Management Facility Life-Cycle Responsibility Assignments
(Continued)**

Asset	Life Cycle Phase						
	Program Planning	Pre-Conceptual	Conceptual	Execute	O&M	Close Out	
						Post Ops	D&D
2734S	RL-WM06				RL-WM06	RL-TP10	RL-ER06
272S	RL-WM06				RL-WM06	RL-TP10	RL-ER06
WSCF	RL-WM06				RL-WM06	RL-ER06	RL-ER06 RL-ER07
6265A	RL-WM06				RL-WM06	RL-ER06	RL-ER06
6265	RL-WM06				RL-WM06	RL-ER06	RL-ER06
6266	RL-WM06				RL-WM06	RL-TP10	RL-ER06
6266B	RL-WM06				RL-WM06	RL-TP10	RL-ER06
6266A	RL-WM06				RL-WM06	RL-TP10	RL-ER06
6267	RL-WM06				RL-WM06	RL-TP10	RL-ER06
6268	RL-WM06				RL-WM06	RL-ER06	RL-ER06
6269	RL-WM06				RL-WM06	RL-ER06	RL-ER06
6270	RL-WM06				RL-WM06	RL-ER06	RL-ER06
300 LEF	RL-WM05				RL-WM05	RL-ER03 RL-WM05	RL-ER03
300 Area Treated Effluent Disposal Facility	RL-WM05				RL-WM05	RL-TP13	RL-TP13
310	RL-WM05				RL-WM05	RL-TP13	RL-TP13
310S	RL-WM05				RL-WM05	RL-TP13	RL-TP13
3906	RL-WM05				RL-WM05	RL-TP13	RL-TP13
307 Retention Basins	RL-WM05				RL-WM05	RL-WM05	RL-ER06 RL-ER07
340 Waste Handling Facility	RL-WM05				RL-WM05	RL-ER05 RL-WM05	RL-ER06 RL-ER07
340	RL-WM05				RL-WM05	RL-WM05	RL-ER06
340A	RL-WM05				RL-WM05	RL-WM05	RL-ER06
340B	RL-WM05				RL-WM05	RL-WM05	RL-ER06
342	RL-WM05				RL-WM05	RL-WM05	RL-ER06
342A	RL-WM05				RL-WM05	RL-WM05	RL-ER06
342B	RL-WM05				RL-WM05	RL-WM05	RL-ER06
342C	RL-WM05				RL-WM05	RL-WM05	RL-ER06
3707F	RL-WM05				RL-WM05	RL-WM05	RL-ER06

* RL PBS Identifier Index:

RL-ER02 - 200 Area Source Remedial Action
 RL-ER03 - 300 Area Source Remedial Action
 RL-ER05 - Surveillance & Maintenance
 RL-ER06 - Decontamination & Decommissioning
 RL-ER07 - Long Term Surveillance & Maintenance
 RL-TP03 - PUREX
 RL-TP10 - Accelerated Deactivation
 RL-TP13 - Landlord
 RL-WM03 - Solid Waste Storage & Disposal
 RL-WM04 - Solid Waste Treatment
 RL-WM05 - Liquid Effluents
 RL-WM06 - Analytical Services

**TABLE 4-20 Waste Management Facility Life-Cycle Responsibility Assignments for
Waste Sites**

Waste Site	Status	Life Cycle Phase		
		S&M	Post Ops	Remedial Action
CP Soil Site Operable Units	Active		RL-ER02 RL-ER05	RL-ER02 RL-ER07
200-E-20, 218-E-10 Borrow Pit	Rejected(Proposed)	RL-WM03		
200 ETF, 200 Area Effluent Treatment Facility (ETF), 2025-E	Active	RL-WM05	RL-ER02	RL-ER02
200-E-17, 200 Area Liquid Effluent Retention Facility (LERF)	Active	RL-WM05	RL-ER02	RL-ER02
UPR-200-W-2, UN-200-W-2	Active	RL-WM04	RL-ER02	RL-ER02

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TABLE 4-20 Waste Management Facility Life-Cycle Responsibility Assignments for Waste Sites (Continued)

Waste Site	Status	Life Cycle Phase		
		S&M	Post Ops	Remedial Action
UPR-200-W-98, UN-216-W-6, 221-T at R-19 Waste Line Break, UN-200-W-98	Active	RL-WM04	RL-ER02	RL-ER02
207-SL, 222-S Retention Basin, REDOX Lab Retention Basin, 207-SL Retention Basin	Active	RL-WM06	RL-ER02	RL-ER02
216-T-29, 291-T Sand Filter Sewer, 216-T-29 French Drain	Active	RL-WM04	RL-ER02	RL-ER02
616-WS-1, 616 NDWSF French Drain	Rejected(Proposed)	RL-WM03		
242-A, 241-A Evaporator	Active	RL-WM05	RL-ER02	RL-ER02
207-A-SOUTH, 207-A, 207-A Retention Basin, 207-A-SOUTH Retention Basin, 207-A South	Active	RL-WM05	RL-ER02	RL-ER02
200-W-46, 222-S Laboratory Room 4-E 90-Day Waste Accumulation Area	Active	RL-WM06		
200-W-49, 222-S Laboratory Room 2-D 90-Day Waste Accumulation Area	Active	RL-WM06		
219-S-101, 219-S-TK-101, TK-101 Crib Waste Receiver, 219-S, TK-101 Receiver Tank	Active	RL-WM06	RL-ER02	RL-ER02
219-S-102, 219-S-TK-102, 219-S Storage Tank 102, 219-S Primary Treatment Tank TK-102	Active	RL-WM06	RL-ER02	RL-ER02
219-S-103, 219-S-TK-103, 219-S Storage Tank 103, 219-S Backup Treatment Tank TK-103	Active	RL-WM06	RL-ER02	RL-ER02
222-SD, 222-S Laboratories Storage Pad, 222-SD, 222-S Storage Pad	Active	RL-WM06	RL-ER02	RL-ER02
296-S-13	Active	RL-WM06	RL-ER02	RL-ER02
296-S-16	Active	RL-WM06	RL-ER02	RL-ER02
296-S-21	Active	RL-WM06	RL-ER02	RL-ER02
207-A-NORTH, 207-A, 207-A Retention Basin, 207-A-NORTH Retention Basin, 207-A North	Active	RL-WM05	RL-ER02	RL-ER02
2607-W3	Active	RL-WM04	RL-ER02	RL-ER02
2607-W4, T Plant Septic Tank and Drain Field	Active	RL-WM04	RL-ER02	RL-ER02
2607-W6	Active	RL-WM06	RL-ER02	RL-ER02
6607-5	Active	RL-WM03	RL-ER02	RL-ER02
218-W-6	Active	RL-WM03	RL-ER02	RL-ER02
218-E-10, 200 East Industrial Waste No. 10, Equipment Burial Ground #10	Active	RL-WM03	RL-ER02	RL-ER02
218-E-12B, 200 East Dry Waste No. 12B, 218-E-12B Burial Ground - Trench 94	Active	RL-WM03	RL-ER02	RL-ER02
218-W-3A, Dry Waste No. 003A	Active	RL-WM03	RL-ER02	RL-ER02
218-W-3AE, Industrial Waste No. 3AE, Dry Waste No. 3AE	Active	RL-WM03	RL-ER02	RL-ER02
218-W-3B, (Low-Level Waste Burial Grounds)	Active	RL-WM03	RL-ER02	RL-ER02
218-W-4B, Dry Waste No. 04B	Active	RL-WM03	RL-ER02	RL-ER02
218-W-4C, Dry Waste No. 004C	Active	RL-WM03	RL-ER02	RL-ER02
218-W-5, Dry Waste Burial Ground, Low-Level Radioactive Mixed Waste Burial Grounds	Active	RL-WM03	RL-ER02	RL-ER02
UPR-200-E-61, Radioactive Contamination from Railroad Burial Cars, UN-216-E-61, UN-200-E-61	Rejected(Proposed)	RL-WM03		
200-W-20, 2706-T Railroad Pit Sump, T Plant Complex	Active	RL-WM04	RL-ER02	RL-ER02
200-W-36,TK-SQ-143, EP 211-143	Active	RL-WM04	RL-ER02	RL-ER02
200-W-40, 292-T, Emission Control Lab, Stack Gas Sampling Building	Active	RL-WM04	RL-ER02	RL-ER02
200-W-45, 291-T Sand Filter, T Plant Stack Sand Filter	Active	RL-WM04	RL-ER02	RL-ER02
200-W-47, 211-T Storage Pad 90-Day Waste Accumulation Area	Active	RL-WM04		
200-W-50, 2706-T 90-Day Waste Accumulation Area	Active	RL-WM04		
221-T-11-R, 221-T-TK-11-R, Tank 11-R 221-T System, T Plant Complex	Active	RL-WM04	RL-ER02	RL-ER02
221-T-15-1, 221-T-TK-15-1, Tank 15-1 221-T System, T Plant Complex	Active	RL-WM04	RL-ER02	RL-ER02
221-T-5-6, 221-T-TK-5-6, Tank 5-6 221-T System, T Plant Complex	Active	RL-WM04	RL-ER02	RL-ER02
221-T-5-7, 221-T-TK-5-7, Tank 5-7 221-T System, T Plant Complex	Active	RL-WM04	RL-ER02	RL-ER02
221-T-5-9, 221-T-TK-5-9, Tank 5-9 221-T System, T Plant Complex	Active	RL-WM04	RL-ER02	RL-ER02
221-T-6-1, 221-T-TK-6-1, Tank 6-1 221-T System, T Plant Complex	Active	RL-WM04	RL-ER02	RL-ER02
200-E-8, 200 East Trench 94 Diesel Spill	Active	RL-WM03		
UPR-200-W-65, Contamination in the T-Plant Railroad Cut, UN-200-W-65	Active	RL-WM04	RL-ER02	RL-ER02
UPR-200-W-73, Contaminated Railroad Track at 221-T, UN-200-W-73	Active	RL-WM04	RL-ER02	RL-ER02
UPR-200-W-85, Radioactive Spill from Multipurpose Transfer Box, UN-216-W-85, UN-200-W-85	Active	RL-WM04	RL-ER02	RL-ER02
UPR-200-W-87, UN-216-W-87, Radioactive Spill from Filter Housing, UN-200-W-87	Active	RL-WM06	RL-ER02	RL-ER02
RMWSF, Radioactive Mixed Waste Storage Facility, 2401W, 2401WB, -WC, -WD, -WE, -WF, -WG, -WH, -WI, -WJ, -WK, -WL, Hanford Central Waste Complex	Active	RL-WM03		RL-ER02

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TABLE 4-20 Waste Management Facility Life-Cycle Responsibility Assignments for Waste Sites (Continued)

Waste Site	Status	Life Cycle Phase		
		S&M	Post Ops	Remedial Action
RMWSF, Radioactive Mixed Waste Storage Facility, 2401W, 2402WB, -WC, -WD, -WE, -WF, -WG, -WH, -WI, -WJ, -WK, -WL, Hanford Central Waste Complex, 2403WA, -WB, -WC, -WD, 2404WA, -WB, -WC	Active	RL-WM03	RL-ER02	RL-ER02
WRAP, Waste Receiving and Processing Facility	Active	RL-WM04	RL-ER02	RL-ER02
CC Soil Site Operable Units	Active		RL-ER02	RL-ER02 RL-ER07
200-A TEDF, 200 Area Treated Effluent Disposal Facility, TEDF, 600-145, 216-E-43A and 216-E-43B	Active	RL-WM05	RL-ER02	RL-ER02
6607-16, Septic Tank, Project C-018H, ECN-C018H-040	Active	RL-WM05	RL-ER02	RL-ER02
600-215, 6265A 90-Day Waste Accumulation Area	Active	RL-WM06		
616, 616 Building Non-Radioactive Dangerous Waste Storage Facility, 616 Nonradioactive Dangerous Waste Storage	Active	RL-WM03	RL-ER02	RL-ER02
6607-9, Septic Tank 6607-9 Large On-Site Sewage System, Project W-011H	Active	RL-WM06	RL-ER02	RL-ER02
600-211, State Approved Land Disposal Site, SALDS, 616A	Active	RL-WM05	RL-ER02	RL-ER02
S600 Soil Site Operable Units	Active		RL-ER03 RL-ER05	RL-ER03 RL-ER07
300 RLWS, 300 Area RLWS, 300 Area Radioactive Liquid Waste Sewer	Active	RL-WM05	RL-ER03	RL-ER03
300 RRLWS, 300 Area Retired RLWS, 300 Area Retired Radioactive Liquid Waste Sewer System, Crib Waste System, Contaminated Sewer, Intermediate Level Radioactive Liquid Waste System	Active	RL-WM05	RL-ER03	RL-ER03
300-112, 340 P-3 Pump Pit, Retention Process Sewer Pump Pit #3 French Drain, Miscellaneous Stream #428	Rejected	RL-WM05		
300-113, 340 Building Steam Condensate/ Water Heater Overflow, Miscellaneous Stream #341	Rejected	RL-WM05		
300-114, 340A Building Steam Condensate, Miscellaneous Stream #427	Rejected	RL-WM05		
300-115, 340B Building Backflow Preventer Emergency Drain, Miscellaneous Stream #426	Rejected	RL-WM05		
300-15, 300 Area Process Sewer System	Active	RL-WM05	RL-ER03	RL-ER03
300-175, 3714 Building Steam Condensate, Miscellaneous Stream #434	Active	RL-WM05	RL-ER03	RL-ER03
300-214, 300 Area Retention Process Sewer	Active	RL-WM05	RL-ER03	RL-ER03
300-34, 300 Area Process Sewer Leak (found during Project L-070 excavation at manhole PS-87)	Active	RL-WM05	RL-ER03	RL-ER03
300-40, Corrosion of Vitrified Clay Sewer Pipe	Active	RL-WM05	RL-ER03	RL-ER03
307 RB, 307 Retention Basins	Active	RL-WM05	RL-ER03	RL-ER03
316-3, 307 Disposal Trenches, Process Water Trenches	Active	RL-WM05	RL-ER03	RL-ER03
340 CHWSA, 340 Complex HWSA, 340 Complex Hazardous Waste Storage Area	Rejected	RL-WM05	RL-ER03	RL-ER03
340 COMPLEX, 340 Radioactive Liquid Waste Handling Facility	Active	RL-WM05		
600-117, 300 Area Treated Effluent Disposal Facility (TEDF), 310 Building	Active	RL-WM05	RL-ER03	RL-ER03
600-210, 300 Area TEDF Outfall	Rejected	RL-WM05		
UPR-300-1, 316-1, 316-1A, 307-340 Waste Line Leak, UN-300-1	Active	RL-WM05	RL-ER03	RL-ER03
UPR-300-11, Underground Radioactive Liquid Line Leak, UN-300-11	Active	RL-WM05	RL-ER03	RL-ER03
UPR-300-2, Releases at the 340 Facility, UN-300-2, UN-316-2	Active	RL-WM05	RL-ER03	RL-ER03
UPR-300-41, 300 Area #340 Building Phosphoric Acid Spill, UN-300-41	Closed Out	RL-WM05		RL-ER03

The 'Rejected' and 'Completed' waste sites are part of the Project Hanford Management Contract (PHMC), but require no additional work from the PHMC team. When they are removed from the contract via direction from the RL Contracting Officer representative, they will be removed from this specification.

* RL PBS Identifier Index:

RL-ER02 - 200 Area Source Remedial Action
 RL-ER03 - 300 Area Source Remedial Action
 RL-ER05 - Surveillance & Maintenance
 RL-ER07 - Long Term Surveillance & Maintenance
 RL-WM03 - Solid Waste Storage & Disposal
 RL-WM04 - Solid Waste Treatment
 RL-WM05 - Liquid Effluents
 RL-WM06 - Analytical Services

4.2.2.e Performance Measures

Performance measures are used to monitor both mission and corporate management. In this document, our focus is on mission management. There are two types of mission-focused performance measures. First, there are performance measures that monitor the progress made on activities that must be completed to enable key steps in waste/material cleanup to occur. These activities may involve such things as facility and system upgrades, development of waste treatment approaches, obtaining regulatory permits, and the negotiation of waste disposal contracts and turnover criteria for unneeded facilities.

Second, there are performance measures that track the progress made in the processing of wastes and other materials (including facilities). These "process" measures monitor changes in waste/material form, storage method, and location. These measures are important because they are directly linked to two key Success Indicators - the reduction in the level of active management required for the inventory and the reduction in the hazard posed by the waste/material. Process measures will monitor the waste/material during each major processing step as the waste material is received from other programs or offsite generators and transitions to the configuration described by the appropriate endpoint target or performance objective. For the Solid Waste project, the endpoint targets for TRU wastes, LLW, and LLMW are presented in the Hanford Strategic Plan and are included in the *Facility Life-Cycle Requirements Section* for the project.

For other waste materials that do not have explicit endpoint targets, performance measures will monitor the processing and movement of wastes that are conducted to achieve appropriate performance objectives (as presented in *Multi-Year Work Plans*).

4.2.2.1 Solid Waste Storage & Disposal

4.2.2.1.1 Project Description Summary

The Solid Waste Storage and Disposal Project provides centralized facilities for the interim storage of solid radioactive mixed low-level waste (MLLW) and transuranic (TRU) wastes and the disposal of solid radioactive MLLW and low-level waste (LLW) for onsite and offsite generators. This supports other Hanford projects (River Protection Project, Spent Nuclear Fuels, Facility Stabilization, Liquid Effluents, Analytical Services and Environmental Restoration) and complex wide projects with the required services in support of their missions and end points. This includes the management, operations, surveillance, monitoring, and maintenance of facility buildings, burial grounds, and current waste inventories. Additionally this project provides inventory reductions through the final disposal of LLW and LDR compliant MLLW. The Solid Waste Storage and Disposal mission is to responsibly manage current and future solid waste streams in a safe, cost-effective and environmentally compliant manner.

4.2.2.1.2 Life-Cycle Material and Waste Flow

The solid waste life cycle projections are based on the Solid Waste Integrated Forecast

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(SWIFT) Report: FY1999 to FY2046, 99.0, revised on 11/30/1998.

Table 4-21 Solid Waste Storage & Disposal Waste/Material Flow (In)

Major Facility	Category	Period	Value	Units
Solid Waste Storage	CH LLMW I	2000 - 2046	35500	cubic meters
	CH LLMW III	2000 - 2035	3520	cubic meters
	CH TRU	2000 - 2032	5780	cubic meters
	CH TRUM	2000 - 2037	2580	cubic meters
	RH LLMW I	2000 - 2032	2730	cubic meters
	RH LLMW III	2000 - 2031	27900	cubic meters
	RH TRU	2000 - 2033	216.0	cubic meters
	RH TRUM	2000 - 2033	1340	cubic meters
Solid Waste Disposal	CH LLMW I	2000 - 2046	40800	cubic meters
	CH LLMW III	2000 - 2007	63.1	cubic meters
	CH LLW I	2000 - 2046	122000	cubic meters
	CH LLW III	2000 - 2046	5490	cubic meters
	RH LLMW I	2000 - 2035	31800	cubic meters
	RH LLW GTCIII	2017 - 2021	6.42	cubic meters
	RH LLW I	2001 - 2016	14.5	cubic meters
	RH LLW III	2000 - 2046	287.0	cubic meters

Table 4-22 Solid Waste Storage & Disposal Waste/Material Flow (Out)

Major Facility	Category	Period	Value	Units
Solid Waste Storage	CH LLMW I	2000 - 2046	26500	cubic meters
	CH TRUM	2000 - 2032	20400	cubic meters
	RH LLMW I	2000 - 2035	30700	cubic meters
	RH TRUM	2000 - 2032	1760	cubic meters
	Spent Nuclear Fuel (SNF)	2001 - 2013	0.04	MTHM
Solid Waste Disposal	CH LLMW I	2000 - 2046	12.0	cubic meters
	CH LLW I	2000 - 2046	180.0	cubic meters
	Waste Water	2000 - 2030	149000	cubic meters

4.2.2.1.3 Facility Life-Cycle Requirements

- Requirements

- Material currently managed as TRU located in the 200 West Area Low-Level Burial Grounds, consisting of heavy metal from research activities mostly as Test Reactor and Isotope Production General Atomics (TRIGA) waste, will be transferred to the 200 Area ISA upon removal from the burial grounds.
 - Solid wastes shall be dispositioned consistent with national policies for management of transuranic, low level, low level mixed and hazardous wastes.

- Planning Assumptions

- Remediation levels and disposal standards that are consistent with long term uses for the central plateau shall be established by either the Resource Conservation and Recovery Act of 1976 (RCRA), CERCLA, or NEPA.
 - Central Plateau high cost surplus facilities shall be transitioned to a low cost, stable, deactivated condition
 - Nuclear materials shall be consolidated in the Central Plateau for interim storage pending ultimate disposition.

- Central Plateau shall be used for the disposal of radioactive waste materials that remain onsite.
- Low Level Waste Burial Grounds shall be operated within the approved safety envelope
- Low Level Waste Burial Ground shall be surveilled and maintained within the approved safety envelope
- Unirradiated uranium shall be dispositioned offsite or disposed onsite as low level waste.
- Onsite low level waste shall be dispositioned in the Central Plateau.
- Offsite low level mixed waste shall be dispositioned in the Central Plateau.
- Offsite low level waste shall be dispositioned in the Central Plateau.
- U.S. Navy reactor compartments shall be dispositioned in the Central Plateau.
- 616 building shall be maintained in the cold standby mode within the approved safety envelope
- Central Plateau facilities shall be maintained within the approved safety envelope
- Low level mixed waste from onsite and offsite sources shall be received in the 200 area
- Low level waste from onsite and offsite sources shall be received in the 200 area

4.2.2.1.4 Project Safety Authorization Basis/NEPA and Permits

The Solid Waste Subproject has an S/RID in place (Hamilton 1995). This S/RID is being revised to include the Liquid Waste and Analytical Services portions of the Waste Management Project.

The Authorization Basis for the Solid Waste Subproject is contained in the following:

- WHC-SD-WM-ISB-007, Central Waste Complex - Interim Safety Basis (Cain 1995)
- WHC-SD-WM-SAR-019, Nonradioactive Dangerous Waste Storage Facility (Bodily 1993)
- HNF-SD-W026-SAR-002, Final Safety Analysis Report for Waste Receiving and Processing Facility (Weidert 1997)
- WHC-SD-CP-SAR-007, T Plant Safety Analysis Report (Johnson 1993)
- WHC-SD-WM-ISB-006, Interim Safety Basis for Solid Waste Facilities (T Plant) (Meyer 1997)
- WHC-SD-WM-SAR-058, Final Safety Analysis for Contact-Handled TRU Waste Drums In-Situ Inspection and Vented Drum Retrieval (Joyce 1994)
- WHC-SD-WM-ISB-002, Solid Waste Burial Grounds Interim Safety Basis (Bendixsen 1995).

4.2.2.1.5 Tri-Party Agreement Requirements

- TPA.M.91.0 Complete acquisition of new facilities, modification of existing facilities, and/or modification of planned facilities necessary for storage, treatment/processing, and disposal of all Hanford Site TRU/TRUM, MLLW, and GTC3. [Due Date: TBD]
- TPA.M.91.1 Complete acquisition of new facilities, modification of existing facilities, and/or modification of planned facilities necessary for storage, treatment/processing prior to disposal of all Hanford Site Post 1970 TRU/TRUM [Due Date: TBD But No Later Than 12/31/2000]
- TPA.M.91.13 Initiate Disposal of CH-MLLW [Due Date: 6/30/2001]

4.2.2.1.6 Interfaces

TABLE 4-23 Solid Waste Storage & Disposal Interfaces

Project Title	Project Number	Interface
Pearl Harbor Naval Shipyard	EXTERNAL	Provides PEARL HARBOR, CH-LLMW-I
FERMI National Accelerator Laboratory	EXTERNAL	Provides FERMI, CH-LLW-I
Bates Accelerator - Massachusetts	EXTERNAL	Provides MIT BATES, CH-LLW-I
Paducah Energy Systems	EXTERNAL	Provides PADUCAH ES, CH-LLW-III
Ames Laboratory	EXTERNAL	Provides AMES, CH-LLW-I
Rockwell - Canoga Park	EXTERNAL	Provides RKW CANOGA, CH-LLW-I
Knolls Atomic Power - Shipyards	EXTERNAL	Provides KAPL SHIPYDS, CH-LLW-I Provides KAPL SHIPYDS, CH-LLW-III
Brookhaven National Laboratory	EXTERNAL	Provides BRKHAVN, CH-LLW-I Provides BRKHAVN, RH-LLW-I
University of California - Davis	EXTERNAL	Provides B LEHR DAV, CH-LLW-I
Lawrence Berkeley Laboratory	EXTERNAL	Provides LBL, CH-LLW-I
Bettis Atomic Power - Laboratory	EXTERNAL	Provides BAPL, CH LLMW I Provides BAPL, CH-LLW-I Provides BAPL, CH-LLW-III
Stanford Linear Accelerator Center	EXTERNAL	Provides STANFORD, CH-LLW-I
Knolls Atomic Power - Laboratory	EXTERNAL	Provides KAPL, CH-LLMW-I
Argonne National Laboratory - East	EXTERNAL	Provides ANL E, CH-LLW-I Provides ANL E, CH-LLW-III Provides ANL E, RH-LLW-III
Puget Sound Naval Shipyard	EXTERNAL	Provides PUGET SOUND, CH-LLMW-I
Rocky Flats	EXTERNAL	Provides ROCKY FLATS, CH-LLMW-III
Princeton Plasma Physics Laboratory	EXTERNAL	Provides PRINCETON, CH-LLW-I
Bettis Atomic Power - Shipyards	EXTERNAL	Provides BAPL SHIPYDS, CH-LLW-I
University of California - Los Angeles	EXTERNAL	Provides UCLA LLW Shipment
Portsmouth Energy Systems	EXTERNAL	Provides PORTSMOUTH ES, CH-LLW-I Provides PORTSMOUTH NS, CH LLMW I
Battelle Columbus Laboratories	EXTERNAL	Provides BAT CLBS LAB, CH-LLMW-I Provides BAT CLBS LAB, CH-LLW-I Provides BAT CLBS LAB, CH-LLW-III
United Kingdom	EXTERNAL	Provides UO3 Depleted Uranium Receipts
PARKS TOWNSHIP	EXTERNAL	Provides PARKS TOWNSHIP, CH-LLW-I
Hanford Legacy	EXTERNAL	Provides Legacy CH LLW I inventory in LLBG Provides Legacy TRIGA Fuel
Tank Farm Operations	RL-TW03	Provides DST RET, CH LLMW III Provides TF OPER, CH-LLMW-I Provides TF OPER, CH-LLMW-III Provides TF OPER, CH-LLW-I Provides TF OPER, RH-LLMW-I Provides TF OPER, RH-LLMW-III Provides TF VADOSE, CH-LLMW-I Provides TWP W314, CH-LLMW-I Provides TWP W314, CH-LLMW-III Provides TWP W314, CH-LLW-I Provides TWP W314, RH-LLMW-I Provides TWP W314, RH-LLMW-III
Retrieval	RL-TW04	Provides DST RET, CH-LLMW-I Provides DST RET, RH-LLMW-III Provides SST LLE, CH-TRUM Provides SST LLE, RH-LLMW-III Provides SST LLE, RH-TRUM Provides SST RET, CH-LLMW-I Provides SST RET, CH-LLMW-III Provides SST RET, CH-LLW-I Provides SST RET, RH-LLMW-I Provides SST RET, RH-LLMW-III Provides TWP W211, CH-LLMW-I Provides TWP W211, CH-LLMW-III Provides TWP W211, RH-LLMW-III Provides TWP W211, RH-TRUM

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TABLE 4-23 Solid Waste Storage & Disposal Interfaces (Continued)

Project Title	Project Number	Interface
Privatization Phase I	RL-TW06	Provides BNFL VIT, CH-LLMW-I Provides BNFL VIT, CH-LLMW-III Provides BNFL VIT, CH-LLW-I Provides BNFL VIT, CH-LLW-III Provides BNFL VIT, RH-LLMW-I Provides BNFL VIT, RH-LLW-III
Privatization Phase II	RL-TW07	Provides BNFL VIT, CH-LLMW-I Provides BNFL VIT, CH-LLMW-III Provides BNFL VIT, CH-LLW-I Provides BNFL VIT, CH-LLW-III Provides BNFL VIT, RH-LLMW-I Provides BNFL VIT, RH-LLW-III Provides HLVP, CH-LLMW-I Provides HLVP, CH-LLMW-III Provides HLVP, CH-LLW-I Provides HLVP, CH-LLW-III Provides HLVP, CH-TRUM Provides HLVP, RH-LLW-III Provides HLVP, RH-TRUM
Solid Waste Treatment	RL-WM04	Provides M-33/M-91, CH-LLW-III Provides M-91 to Disposal, RH LLMW I Provides T Plant Canyon Deactivation, CH-LLW-I Provides T Plant Canyon Deactivation, CH-TRUM Provides T PLANT, CH-LLMW-I Provides T PLANT, CH-LLW-I Provides T PLANT, RH-LLMW-I Provides T PLANT, RH-LLW-I Provides WRAP, CH LLW I Provides WRAP, CH-LLMW-I Provides WRAP, CH-TRU Provides WRAP, CH-TRUM Receives CH LLW I for Compliance Verification Receives Retrieved TRIGA Fuel Receives Retrieved TRIGA Fuel Receives Storage to M-91, CH TRUM Receives Storage to M-91, RH LLMW I Receives Storage to M-91, RH TRUM Receives Storage to WRAP, CH TRUM
Liquid Effluents	RL-WM05	Provides 300 TEDF CH LLMW I Provides 300 TEDF CH LLW I Provides ETF, CH-LLMW-I Provides ETF, CH-LLW-I Receives 200 East Mixed Waste Disposal Trench Leachate Receives Mixed Waste Disposal Trench Leachate
Analytical Services	RL-WM06	Provides 327 Facility, CH LLMW I Provides 327 Facility, CH LLW I Provides 327 Facility, CH-LLMW-III Provides 327 Facility, CH-LLW-III Provides 327 Facility, CH-TRU Provides ANALYT LAB, CH-LLMW-I Provides ANALYT LAB, CH-LLMW-III Provides ANALYT LAB, CH-LLW-I Provides ANALYT LAB, CH-LLW-III Provides WSCF, CH-LLMW-I Provides WSCF, CH-LLW-I Receives Analytical Laboratory Samples from 200-SWM Receives In-Field Laboratory Samples from 200-SWM

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TABLE 4-23 Solid Waste Storage & Disposal Interfaces (Continued)

Project Title	Project Number	Interface
Spent Nuclear Fuel Project	RL-WM01	Provides K Basin Deactivation, CH LLMW I Provides K Basin Deactivation, CH TRU Provides K Basin Deactivation, CH-LLW-I Provides K Basin Deactivation, RH TRU Provides K Basins, CH-LLW-I Provides K OPER, CH-LLMW-I Provides K OPER, CH-LLW-III Provides K OPER, RH-TRU Provides K OPER, RH-TRUM Provides K Project, CH LLW I Provides K PROJECT, CH-TRU
WESF	RL-TP02	Provides WESF, CH LLMW I Provides WESF, CH LLW I Provides WESF, RH LLMW III Provides WESF, RH-LLW-GTCIII Provides WESF, RH-LLW-III
300 Area/SNM	RL-TP04	Provides FUEL TRANS, CH-LLW-I
PFP	RL-TP05	Provides PFP, CH-LLMW-I Provides PFP, CH-LLW-I Provides PFP, CH-LLW-III Provides PFP, CH-TRU Provides PFP, CH-TRUM
Accelerated Deactivation	RL-TP10	Provides T Plant Canyon Deactivation, CH-LLW-I Provides T Plant Canyon Deactivation, CH-TRUM
324/327 Facility Transition	RL-TP08	Provides 324 Facility, CH LLMW III Provides 324 Facility, CH LLW I Provides 324 Facility, CH LLW III Provides 324 Facility, CH-TRU Provides 324 Facility, CH-TRUM Provides 324 Facility, RH-TRU Provides 324 Facility, RH-TRUM
Landlord	RL-TP13	Provides DYNACORP (MESS), CH LLW I
100 Area Source Remedial Action	RL-ER01	Provides BHI SURPLS FAC, CH LLW I Provides BHI SURPLS FAC, CH-LLMW-I Provides Received CH-TRU
200 Area Source Remedial Action	RL-ER02	Provides BHI SURPLS FAC, CH-TRUM Provides BHI SURPLUS FAC, CH-TRU Provides Deactivated Non-Mixed Waste Burial Grounds Receives Safe & Compliant Excess Non-Mixed Waste Burial Grounds
PNNL Waste Management	RL-ST01	Provides PNNL, CH-LLMW-III Provides PNNL, CH-TRU Provides PNNL, RH-LLMW-III
Advanced Reactors Transition	RL-TP11	Provides PRTR, CH-LLMW-I Provides PRTR, CH-LLW-I Provides SODIUM TST, CH-LLMW-III
Low-Level Mixed Waste Stabilization Contract	EXTERNAL	Provides Stabilized Contact Handled Low Level Mixed Waste Provides STP to Disposal, CH LLMW I Provides STP Treated CH LLMW Receives Storage to STP, CH LLMW I
Thermal Treatment Contract	EXTERNAL	Provides Commercially Treated LLMW Provides CTT Treated to Disposal, CH LLMW I Receives Storage to CTT, CH LLMW I

4.2.2.1.7 Requirements References

- DOE/EIS-0222D, Draft Hanford Remedial Action Environmental Impact Statement and Comprehensive Land Use Plan"
- DOE/RL-89-10, Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement), Revision 5"
- DOE/RL-96-92, Hanford Strategic Plan"

- HNF-EP-0063, Hanford Site Solid Waste Acceptance Criteria"
- WHC-EP-0063, Hanford Site Solid Waste Acceptance Criteria"

4.2.2.2 Solid Waste Treatment

4.2.2.2.1 Project Description Summary

The Solid Waste Treatment project provides onsite and commercial offsite mixed waste treatment, waste verification and repackaging, and decontamination services to customers throughout the Hanford Site. It also provides retrieval of stored transuranic (TRU) waste and processing of transuranic waste in preparation of shipment offsite for disposal at the Waste Isolation Pilot Plant (WIPP). This work supports agreements with the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement, TPA) stakeholders and addresses specific milestones (M-19-00, M-19-01, M-91-00, M-91-01, M-91-03, M-91-04, M-91-05, M-91-06, M-91-07, M-91-08, M-91-11, M-91-12, M-91-13, M-91-14, and M-91-15) for initiating and completing treatment for a variety of low-level waste (LLW), mixed low-level waste (MLLW), transuranic (TRU), and transuranic mixed (TRUM) wastes. Wastes are treated for disposal purposes, typically driven by Resource Conservation and Recovery Act (RCRA) Land Disposal Restrictions (LDR) for MLLW or by WIPP waste acceptance criteria for TRU and TRUM. This work is accomplished through existing facilities on the Hanford Site such as the T Plant complex, the Waste Receiving and Processing (WRAP) Facility, and through offsite commercial treatment contracts. Capital projects associated with mixed waste treatment activities and TRU waste retrieval are also addressed in this project baseline summary.

WASTE RECEIVING AND PROCESSING (WRAP) FACILITY:

The WRAP facility provides LLW and MLLW verification sampling capability for waste already in storage as well as newly generated waste. The WRAP facility provides verification or characterization required by DOE Order 5820.2/435.1, Washington Administrative Code 173-303 and 40 Code of Federal Regulations 264 for the Low-Level Burial Grounds and RCRA-compliant storage facilities to be able to accept solid waste (drums and boxes) for storage or disposal. Without WRAP operations, stockpiling of solid radioactive wastes could occur across the Hanford site.

WRAP also provides characterization and treatment for TRU/TRUM waste in above ground and retrievable underground storage at Hanford. The transuranic fraction will be prepared for transport to the WIPP for disposal, while the non-transuranic fraction will be segregated for onsite disposal in the Low Level Burial Grounds or for further processing. Many of the suspect transuranic containers have been underground longer than their design lifetime of 20 years.

T PLANT COMPLEX

The T Plant Complex provides mixed waste treatment, waste verification and repackaging, and decontamination services to customers throughout the Hanford Site. Work is performed at the T Plant Complex which has been providing decontamination services to the site since 1957. The T Plant Complex is divided into two sub-complexes, the 221-T canyon facility and the 2706-T sub-complex, which also includes the 214-T chemical storage building. The entire complex is under RCRA interim status as a Treatment and Storage unit. Each of the two sub-complexes has its own unique characteristics that allow for a variety of services to be provided to Hanford

Site customers.

The 221-T canyon was originally constructed in 1943-1944 to extract plutonium from irradiated reactor fuel. It began a mission as a high-dose decontamination facility in 1957. Throughout the years various pieces of large contaminated equipment have been stored in the canyon. Spent nuclear fuel from the decommissioned Shippingport reactor is also stored under water in the canyon. Processing in the canyon also includes items contaminated with alpha-bearing radionuclides. Currently, work in the 221-T canyon is limited to canyon clean-out activities. Planned activities include storage of sludge from K Basin cleanout, and may include mixed waste treatment of remote-handled or alpha contaminated waste.

The 2706-T Complex began work in 1959 as a low-dose decontamination facility with specific emphasis on large rolling stock equipment. Since then, it has also assumed the mission of verification of LLW and MLLW, treatment of MLLW, including low-dose alpha-bearing MLLW, to meet Land Disposal Restrictions (LDR), and TRU/TRUM waste head gas sampling. The facility was expanded in 1992, and again in 1998, to accommodate the larger demand for its expanded waste treatment services.

Operation of the T Plant Complex maintains the overall objective of providing decontamination services of high-dose rate waste and contaminated equipment to meet applicable standards for disposal, storage, re-use, or free release. Low-dose rate waste and contaminated equipment is also managed for repair and return to service and supporting site goals in pollution prevention, recycling, waste reduction, and mixed waste treatment. Safe storage of high-dose contaminated equipment and spent nuclear fuel are also provided.

MIXED WASTE TREATMENT PROGRAM

The Mixed Waste Treatment Program provides for the RCRA and Toxic Substances Control Act (TSCA) required treatment and disposal of several categories of mixed waste. The mixed waste covered under this project includes MLLW to be generated in the future as well as MLLW currently stored on the Hanford Site. Treatment for these wastes can typically be either stabilization treatment or thermal treatment with commercial contracts currently in place to perform some of this work. The treatment program is governed by TPA milestones M-19 and M-91, which provide for utilization of government owned and commercial treatment facilities. The mixed waste treatment program satisfies TPA interim milestones M-19-00, M-19-01, and M-91-12.

TRU WASTE PROGRAM

The TRU Waste Program provides for activities associated with preparing TRU waste for shipment to WIPP. These include obtaining WIPP certification, and characterizing TRU and suspect TRU waste drums. Characterization may include development of acceptable knowledge information, real-time radiography, non-destructive assay, visual examination, head-gas sampling, RCRA sampling, and repackaging if necessary.

PHASE I TRU RETRIEVAL

The Phase I TRU Retrieval Program provides for the activities associated with retrieval of contact handled, suspect transuranic waste from aboveground or underground storage in the Solid Waste Burial Grounds. A phased approach to retrieval has been selected and this project addresses Phase I. The waste has been buried in containers that were not intended to be in the ground for more than twenty years. Many of these containers have begun exceeding this twenty-year limit and will continue to deteriorate the longer they remain underground. The

Record of Decision for the Hanford Defense Waste - Environmental Impact Statement states that the post 1970 transuranic waste must be retrieved. Retrieval of waste is governed by the M-91 set of TPA milestones (specifically M-91-04 and M-91-07).

CAPITAL PROJECT W-156

Capital Project W-156 provides for the activities associated with the design, construction, startup, and operation of a facility that will be used to retrieve remote handled transuranic waste from the 218-W-4B Alpha Caissons. The Record of Decision for the Hanford Defense Waste-Environmental Impact Statement states that the post 1970 transuranic waste must be retrieved. Retrieval of waste is governed by the M-91 set of TPA milestones.

CAPITAL PROJECT W-221 (Phase II)

Capital Project W-221 provides for the activities associated with the design, construction, startup, and operation of a facility that will be used to retrieve contact handled and remote handled transuranic waste from underground storage trenches at the Hanford site. A phased approach to retrieval has been selected and this project addresses Phase II. The waste has been buried in containers that were not intended to be in the ground for more than twenty years.

Many of these containers have begun exceeding this twenty-year limit and will continue to deteriorate the longer they remain underground. The Record of Decision for the Hanford Defense Waste-Environmental Impact Statement states that the post 1970 transuranic waste must be retrieved. Retrieval of waste is governed by the M-91 set of TPA milestones.

CAPITAL PROJECT/TREATMENT CONTRACT - M-91 FACILITY

Capital Project/Treatment Contract - M-91 Facility provides for the activities associated with the design, construction, startup, and operation of a facility(ies) or providing for a contract to treat remote-handled (RH) and large box MLLW and TRU/TRUM waste that is remote handled or requires other special processing. These treatment activities are in support of the M-91 set of TPA milestones.

4.2.2.2.2 Life-Cycle Material and Waste Flow

The life cycle projections are based on treatment of the quantities of solid waste forecasted in the Solid Waste Integrated Forecast (SWIFT) Report: FY1999 to FY2046, 99.0, revised on 11/30/1998.

Table 4-24 Solid Waste Treatment Waste/Material Flow (In)

Major Facility	Category	Period	Value	Units
T-Plant Canyon Facility	Spent Nuclear Fuel (SNF)	2004 - 2005	612.0	cubic meters
M-91 Facility	CH TRUM	2000 - 2032	8320	cubic meters
	RH LLMW I	2000 - 2035	3210	cubic meters
	RH TRUM	2000 - 2032	1760	cubic meters
	Spent Nuclear Fuel (SNF)	2001 - 2013	0.04	MTHM
WRAP	CH LLW I	2000 - 2046	180.0	cubic meters
	CH TRUM	2000 - 2032	12000	cubic meters

Table 4-25 Solid Waste Treatment Waste/Material Flow (Out)

Major Facility	Category	Period	Value	Units
T-Plant Canyon Facility	CH LLMW I	2000 - 2027	71.9	cubic meters
	CH LLW I	2000 - 2027	1350	cubic meters
	CH TRUM	2007 - 2009	39.8	cubic meters
	HAZ	2000 - 2027	98.3	cubic meters

Table 4-25 Solid Waste Treatment Waste/Material Flow (Out) (Continued)

Major Facility	Category	Period	Value	Units
	HLW	2000 - 2018	1890	cubic meters
	RH LLMW I	2000 - 2027	7.19	cubic meters
	RH LLW I	2001 - 2004	2.05	cubic meters
	Spent Nuclear Fuel (SNF)	2002 - 2002	15.8	MTHM
	Treated Liquid Effluent	2000 - 2010	499.0	cubic meters
M-91 Facility	RH LLMW I	2000 - 2035	4300	cubic meters
	RH TRUM	2000 - 2033	996.0	cubic meters
	Spent Nuclear Fuel (SNF)	2001 - 2013	0.04	MTHM
WRAP	CH LLMW I	2000 - 2032	33.1	cubic meters
	CH LLW I	2000 - 2032	1400	cubic meters
	CH TRUM	2000 - 2033	16800	cubic meters

4.2.2.2.3 Facility Life-Cycle Requirements

- Requirements

- Facilities discharging to the 200 Area TEFB shall implement Best Available Technology (BAT)/All Known, Available, and Reasonable Treatment (AKART). The generator shall provide the information required by WAC 173-240, Submission of Plans and Reports for Construction of Waste Water Facilities.
- Solid waste shall be treated to convert the waste to an acceptable form for final disposition.
- Container contents of newly generated waste shall be inspected to verify waste contents.
- (b)(3) Mixed transuranic waste shall be treated, where feasible and practical, to destroy the hazardous waste component.
- Central Plateau gaseous effluent releases shall be monitored
- The TRU and transuranic mixed (TRUM) waste processed shall meet transuranic package transporter (TRUPACT) II shipping requirements and the WIPP WAC for disposal at WIPP.
- Complete Phase I for Post 1970 CH TRU/TRUM Retrieval. [Due Date: 9/30/2004]
- Provide for treatment of radioactive, hazardous, sanitary, and polychlorinated biphenyl waste, or combinations thereof, either through procurement of offsite treatment services (preferred), re-use of existing facilities (second option), or construction of facilities. Construction of new government-owned treatment facilities is not desired. Treatment includes stabilization, thermal treatment, separation of waste fractions, and final waste form processing.
- Integrate and perform characterization activities required for treatment, Central Waste Complex acceptance, and other solid waste activities.
- Utilize the T-Plant complex as a central decontamination facility on the Hanford Site. This facility is permitted by the Washington Department of Ecology (Ecology) as a RCRA treatment and storage unit.
- Separate all other wastes for appropriate disposal (e.g., retrieval, segregating, and repackaging Transuranic [TRU] wastes for the Waste Isolation Pilot Plant [WIPP]); remove hazardous constituents or liquid from solid waste; and separate Land Disposal Restricted (LDR) waste from liquid effluents.
- Contractor waste certification shall be in accordance with DOE/WIPP-069, Waste Acceptance Criteria for Waste Isolation Pilot Plant.

- Planning Assumptions

- Transitioned facilities shall be decontaminated and decommissioned sufficiently to enable removal or closure through entombment
- Packaged Hanford TRU waste shall be shipped to Waste Isolation Pilot Plant.
- Central Plateau facilities shall be maintained within the approved safety envelope
- T Plant shall be surveilled and maintained within the approved safety envelope
- PWR fuel shall be safely stored in T Plant
- The WRAP facility shall be operated and maintained within the approved safety envelope.

4.2.2.2.4 Project Safety Authorization Basis/NEPA and Permits

The Solid Waste Subproject has an S/RID in place (Hamilton 1995). This S/RID is being revised to include the Liquid Waste and Analytical Services portions of the Waste Management Project.

The Authorization Basis for the Solid Waste Subproject is contained in the following:

- WHC-SD-WM-ISB-007, Central Waste Complex - Interim Safety Basis (Cain 1995)
- WHC-SD-WM-SAR-019, Nonradioactive Dangerous Waste Storage Facility (Bodily 1993)
- HNF-SD-W026-SAR-002, Final Safety Analysis Report for Waste Receiving and Processing Facility (Weidert 1997)
- WHC-SD-CP-SAR-007, T Plant Safety Analysis Report (Johnson 1993)
- WHC-SD-WM-ISB-006, Interim Safety Basis for Solid Waste Facilities (T Plant) (Meyer 1997)
- WHC-SD-WM-SAR-058, Final Safety Analysis for Contact-Handled TRU Waste Drums In-Situ Inspection and Vented Drum Retrieval (Joyce 1994)
- WHC-SD-WM-ISB-002, Solid Waste Burial Grounds Interim Safety Basis (Bendixsen 1995).

4.2.2.2.5 Tri-Party Agreement Requirements

- TPA.M.19.0 Complete treatment and/or direct disposal of at least 1, 644 cubic meters of CH MLLW. [Due Date: 9/30/2002]
- TPA.M.19.0 Complete treatment/and or direct disposal of at least 1644 cubic meters of contact handled mixed low level waste (CH-MLLW) already in storage as of October, 1995, as well as newly generated Hanford Site mixed low level waste. [Due Date: 9/30/2002]
- TPA.M.32.3 Complete T Plant tank actions. [Due Date: 9/30/1999]
- TPA.M.91.0 Complete acquisition of new facilities, modification of existing facilities, and/or modification of planned facilities necessary for storage, treatment/processing, and disposal of all Hanford Site TRU/TRUM, MLLW, and GTC3. [Due Date: TBD]
- TPA.M.91.1 Complete acquisition of new facilities, modification of existing facilities, and/or modification of planned facilities necessary for storage, treatment/processing prior to disposal of all Hanford Site Post 1970 TRU/TRUM [Due Date: TBD But No Later Than 12/31/2000]

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- TPA.M.91.4 Complete construction of small container contact handled (CH) TRU/TRUM retrieval facility (s) and initiate (Project W-113) retrieval of small container TRU/TRUM from 200 Area burial grounds. [Due Date: 9/30/2000]
- TPA.M.91.7 Complete Project W-113 for Post 1970 CH TRU/TRUM Retrieval. [Due Date: 9/30/2004]
- TPA.M.91.8.T.1 Complete construction and initiate hot operations of RH and large size TRU/TRUM processing facility (a final acquisition schedule for this facility will be established as an interim milestone no later than December 2000). [Due Date: 6/30/2005]
- TPA.M.91.12 Initiate thermal treatment of currently stored and newly generated CH-MLLW. At least 600 cubic meters will be provided for treatment by December 2005. [Due Date: 12/31/2000]
- TPA.M.91.15 Complete acquisition of facilities and initiate treatment of RH and large container (CH) MLLW [Due Date: 6/30/2008]

4.2.2.2.6 Interfaces

TABLE 4-26 Solid Waste Treatment Interfaces

Project Title	Project Number	Interface
Hazardous Waste Disposal Contracts	EXTERNAL	Receives T PLANT, HAZ
Waste Isolation Pilot Project	EXTERNAL	Receives M-91 to WIPP, RH TRUM Receives WRAP, CH-TRU Receives WRAP to WIPP, CH TRUM
Tank Farm Operations	RL-TW03	Receives Liquid Waste From 221-T to West Area DSTs Receives Waste from 221-T to 204-AR Receives Waste From 2706-T to 204-AR
Solid Waste Storage & Disposal	RL-WM03	Provides CH LLW I for Compliance Verification Provides Retrieved TRIGA Fuel Provides Retrieved TRIGA Fuel Provides Storage to M-91, CH TRUM Provides Storage to M-91, RH LLMW I Provides Storage to M-91, RH TRUM Provides Storage to WRAP, CH TRUM Receives M-33/M-91, CH-LLW-III Receives M-91 to Disposal, RH LLMW I Receives T Plant Canyon Deactivation, CH-LLW-I Receives T Plant Canyon Deactivation, CH-TRUM Receives T PLANT, CH-LLMW-I Receives T PLANT, CH-LLW-I Receives T PLANT, RH-LLMW-I Receives T PLANT, RH-LLW-I Receives WRAP, CH LLW I Receives WRAP, CH-LLMW-I Receives WRAP, CH-TRU Receives WRAP, CH-TRUM
Liquid Effluents	RL-WM05	Receives T Plant, Treated Liquid Effluent
Analytical Services	RL-WM06	Receives Analytical Laboratory Samples from 200-TP Receives Analytical Laboratory Samples from 200-WRAP Receives In-Field Laboratory Samples from 200-TP Receives In-Field Laboratory Samples from 200-WRAP
Spent Nuclear Fuel Project	RL-WM01	Provides K-Basin Sludge Receives PWR Core 2 Shipment Receives TRIGA Fuel to 200 Area ISA
Canister Storage Building Operations	RL-WM02	Receives PWR Core 2 Shipment Receives TRIGA Fuel to 200 Area ISA

TABLE 4-26 Solid Waste Treatment Interfaces (Continued)

Project Title	Project Number	Interface
Accelerated Deactivation	RL-TP10	Provides Deactivated T-Plant Facility Provides Safe & Compliant Deactivated T-Plant Facility Provides Safe & Compliant Excess T-Plant Facility Provides Safe & Compliant Stabilized T-Plant Facility Provides Stabilized T-Plant Facility Receives Deactivated T-Plant Facility Receives Excess 2706-T Receives Excess T-Plant Facility Receives Excess WRAP Facility Receives Safe & Compliant Deactivated T-Plant Facility Receives Safe & Compliant Excess T-Plant Facility Receives Safe & Compliant Stabilized T-Plant Facility Receives Stabilized T-Plant Facility
Decontamination & Decommissioning	RL-ER06	Receives Safe & Compliant Deactivated T-Plant Facility
ER Disposal Facility (ERDF)	RL-ER04	Receives Rubble from Demolished M-33/M-91 Facility Receives Rubble from WRAP Module 1 Facility Demolition

4.2.2.2.7 Requirements References

- DOE Order 5820.2A, Radioactive Waste Management"
- DOE/EIS-0222D, Draft Hanford Remedial Action Environmental Impact Statement and Comprehensive Land Use Plan"
- DOE/RL-89-10, Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement), Revision 5"
- DOE/RL-96-92, Hanford Strategic Plan"
- DOE/WIPP-069, WIPP Waste Acceptance Criteria"
- ST 4502, State Waste Discharge Permit for the 200 Area TEDF"
- WHC-SD-WM-MAR-008, TWRS Mission Analysis Report"

4.2.2.3 Liquid Effluents

4.2.2.3.1 Project Description Summary

The Liquid Effluents Project provides integrated liquid effluent management to support cleanup of the Hanford Site. Its mission is to responsibly manage current and future liquid effluent streams in a safe, cost-effective, and environmentally-compliant manner. Waste volume reduction support is also provided to tank waste remediation. The mission is achieved through planning and integration; stakeholder interaction; definition of requirements for generators; and provision of timely storage, treatment and disposal capability. The Liquid Effluents Project receives, treats, and disposes of liquid effluents from other projects. Waste acceptance criteria are established for liquid effluents, and compliance with discharge limits is verified.

The facilities owned and operated by the Liquid Effluents Project and the technical approach to accomplishing its mission is described below.

242-A Evaporator - The 242-A Evaporator concentrates dilute liquid tank wastes by evaporation. The volume of tank wastes is reduced to eliminate the need to construct additional double-shell

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tanks (DSTs). The concentrated waste is returned to tank farms for storage. Process condensate from the 242-A Evaporator is sent to the LERF for temporary storage while awaiting treatment in the ETF.

Liquid Effluent Retention Facility (LERF) - The LERF consists of three RCRA-compliant surface impoundments for temporarily storing process condensate from the 242-A Evaporator and other liquid effluents. The LERF provides equalization of the flow and pH of the feed to the ETF.

Effluent Treatment Facility (ETF) - Liquid effluents are treated in the ETF to remove toxic metals, radionuclides, and ammonia and to destroy organics. The ETF treatment process includes pH adjustment, filtration, ultraviolet light/peroxide (UV/OX) destruction of organics, reverse osmosis (RO), and ion exchange. A truck unloading facility allows liquid effluents to be received from other projects. A cross-site transfer system is used to transfer groundwater and ERDF leachate to the ETF for treatment. The treated effluent has been delisted from RCRA and is discharged under a WAC 173-216 State Waste Discharge Permit to a state-approved land disposal site (SALDS) in the 200 West Area.

200 Area Treated Effluent Disposal Facility (200 Area TEDF) - The 200 Area TEDF is a collection and disposal system for non-RCRA waste streams. The effluent is discharged to two 5-acre disposal ponds located east of the 200 East Area. Discharge from the 200 Area TEDF must comply with limits specified in the WAC 173-216 State Waste Discharge Permit.

300 Area Treated Effluent Disposal Facility (300 Area TEDF) - The 300 Area TEDF treats industrial wastewater from laboratories and research facilities in the 300 Area. The wastewater is received via the process sewer. Liquid effluents from other projects which meet acceptance criteria can also be received and treated in the 300 Area TEDF. Treatment includes pH adjustment, precipitation, filtration, UV/OX, and ion exchange. The process removes toxic metals including mercury, and destroys organics and cyanide. Treated effluent is monitored and discharged to the Columbia River under an NPDES permit.

307 Retention Basins - The retention process sewer system in the 300 Area receives liquid effluents which are potentially radioactive. These liquid effluents collect in the 307 Retention Basins where they are monitored and batch released to the process sewer for subsequent treatment in the 300 Area TEDF. Provisions exist for diverting and isolating off-specification liquid effluents.

340 Waste Handling Facility - The 340 Facility previously received radioactive/mixed liquid waste from laboratories in the 300 Area for loadout and transfer to tank farms in the 200 Area. Waste was received via the radioactive liquid waste system and accumulated in two 15,000 gal tanks located in a covered, below-grade vault in the 340 building. Six above-ground 8,000-gal tanks in the adjacent 340-A building provided backup storage capability. The 340-B building was used for rail loadout of the wastes. The 340 Facility ceased receiving liquid wastes in September 1998, but residual waste remains in the tanks. Minimum safe operation and maintenance of the 340 Facility will continue until cleanout is completed.

Miscellaneous Streams - Miscellaneous Streams include liquid effluents generated from hydrotest, maintenance, and construction activities; cooling water and condensate discharges; and storm water run-off. These discharges are considered non-hazardous and non-radioactive. Categories of Miscellaneous Streams are permitted under the WAC 173-216 State Waste Discharge Permit Program rather than permitting individual streams. Use of categorical permits

provides a vehicle to easily permit new Miscellaneous Streams of similar characteristics and origin.

4.2.2.3.2 Life-Cycle Material and Waste Flow

The liquid effluent life cycle projections are based on estimates provided by the Projects for volumes of waste water generated.

Table 4-27 Liquid Effluents Waste/Material Flow (In)

Major Facility	Category	Period	Value	Units
200 LEF	HLW	2000 - 2018	77100	cubic meters
	Treated Liquid Effluent	2000 - 2035	12500000	cubic meters
	Waste Water	2000 - 2030	2400000	cubic meters
300 LEF	Industrial Waste Water	2000 - 2030	4750000	cubic meters

Table 4-28 Liquid Effluents Waste/Material Flow (Out)

Major Facility	Category	Period	Value	Units
200 LEF	CH LLMW I	2000 - 2030	2530	cubic meters
	CH LLW I	2000 - 2030	72.9	cubic meters
	HAZ	2000 - 2030	71.6	cubic meters
	HLW	2000 - 2011	44300	cubic meters
	Sanitary Liquid Waste	2000 - 2032	62400	cubic meters
	Sanitary Solid Waste	2000 - 2034	995.0	cubic meters
	Treated Liquid Effluent	2000 - 2035	22300000	cubic meters
	Waste Water	2000 - 2019	61700	cubic meters
300 LEF	CH LLMW I	2000 - 2030	58.0	cubic meters
	CH LLW I	2000 - 2030	4690	cubic meters
	HAZ	2000 - 2030	72.4	cubic meters
	Sanitary Liquid Waste	2000 - 2025	7730	cubic meters
	Sanitary Solid Waste	2000 - 2025	709.0	cubic meters
	Treated Liquid Effluent	2000 - 2030	4750000	cubic meters

4.2.2.3.3 Facility Life-Cycle Requirements

- Requirements
 - Operation of the LERF shall be in accordance with the Hanford Facility RCRA Permit WA7890008967.
 - Discharge limits for the ETF are specified in the WAC 173-216 State Waste Discharge Permit No.ST 4500, and the U.S. Environmental Protection Agency (EPA) approval of the 200 Area Effluent Treatment Facility Delisting Petition, DOE/RL-92-72 (documented in 60 FR 31115 and codified in 40 CFR 261, Appendix IX, Table 2). Constituents not identified in the permit are subject to the limits in WAC 173-200, Water Quality Standards for Ground Waters of the State of Washington, and 4 percent of the derived concentration guide values in DOE Order 5400.5, Radiation Protection of the Public and Environment, as applicable.

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- The discharge from the 200 Area TEDF must meet the limits specified in the WAC 173-216 State Waste Discharge Permit No. ST 4502. Constituents not identified in the permit are subject to the limits in WAC 173-200, Water Quality Standards for Ground Waters of the State of Washington, and 4 percent of the derived concentration guide values in DOE Order 5400.5, Radiation Protection of the Public and Environment, as applicable. The wastewater can not contain any listed dangerous waste.
- Facilities discharging to the 200 Area TEDF shall implement Best Available Technology (BAT)/All Known, Available, and Reasonable Treatment (AKART). The generator shall provide the information required by WAC 173-240, Submission of Plans and Reports for Construction of Waste Water Facilities.
- Hydrotest, maintenance, and construction discharges are subject to the requirements contained in the State Waste Discharge Permit No. ST 4508.
- Cooling water and condensate discharges are subject to the requirements contained in the State Waste Discharge Permit No. ST4509.
- Industrial storm water discharges are subject to the requirements contained in the State Waste Discharge Permit No. ST 4510.
- Discharge limits for the 300 Area TEDF are specified in the National Pollutant Discharge Elimination System Permit No. WA-002591-7, and the Washington Department of Natural Resources Land Lease. Constituents not identified in the permits are subject to the limits in WAC 173-201A, Water Quality Standards for Surface Waters of the State of Washington, and 4 percent of the derived concentration guide values in DOE Order 5400.5, Radiation Protection of the Public and Environment, as applicable.
- Operation of the 242-A Evaporator shall be in accordance with the Hanford Facility RCRA Permit WA7890008967.
- Operation of the ETF shall be in accordance with the Hanford Facility RCRA Permit WA7890008967.
- Categorical WAC 173-216 permit applications shall be used to permit groups of similar Miscellaneous Streams.
- A study to identify options for the selection and implementation of Best Management Practices for miscellaneous streams, and an implementation schedule, shall be prepared for Ecology approval.
- The draft Hanford Air Operating Permit contains terms and conditions of the Washington Department of Ecology Air Operating Permit (permit number not established, application DOE/RL-95-07), and the Washington Department of Health Hanford Site Radioactive Air Emissions License No. FF-01.
- Solid waste transferred to the ERDF shall meet the waste acceptance criteria specified in the Environmental Restoration Disposal Facility Waste Acceptance Criteria, BHI-00139.
- Operation and maintenance of the 242-A Evaporator shall be in accordance with HNF-SD-WM-SAR-023, 242-A Evaporator/Crystallizer Safety Analysis Report.
- Solids shall not be allowed to accumulate in the LERF basins which may require special cleanout actions. [LERF Treatment Exemption, 95-LEP-015, 40 CFR 2681].
- Storage of wastewater containing LDR constituents shall be allowed for up to one year prior to treatment in the ETF. [LERF Treatment Exemption, 95-LEP-015, 40 CFR 268].

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- Operation and maintenance of the 200 Area TEDF shall be in accordance with the general safety requirements in approved Project Hanford procedures for Occupational Safety and Health. A preliminary safety evaluation was completed for the 200 Area TEDF titled "Preliminary Safety Evaluation - 200 Area Treated Effluent Disposal Facility, Project W-049H." The 200 Area TEDF is a general-use facility and safety documentation is not required according to DOE Order 5481.1B.
- The Contractor shall manage process sewer services.
- All existing injection wells shall be registered under WAC 173-218. New injection wells shall be registered before being placed in service.
- Requirements for effluent monitoring, sampling, analysis, operating group notification, physical interface points, implementing procedures, and configuration control are documented in the 200 Area Treated Effluent Disposal Facility Interface Control Document, HNF-SD-W049H-ICD-001.
- Utilize waste minimization and evaporation to manage the waste volume such that the tank capacity of existing double-shell storage tanks is not exceeded.
- Operate treatment facilities and systems for liquid effluents.
- Manage current and future Hanford Site liquid effluents, including collecting, treating, and disposing of liquid effluent wastes. The program uses an integrated liquid effluent treatment system with a combination of local and central treatment systems to achieve cost-effective liquid effluent disposal. Current liquid effluent facilities include the 200 Area Liquid Effluent Retention Facility, 200 Area Treated Effluent Disposal Facility (TEDF), 200 Area Effluent Treatment Facility, 300 Area TEDF, and the 340 facility.
- Operation and maintenance of the 307 Retention Basins shall be in accordance with the Hanford 300 Area Retention Process Sewer Hazard Categorization, HNF-SD-WM-SAD-027.

● **Planning Assumptions**

- Facilities and systems shall be made available for other uses.
- Facilities shall be transitioned to the surveillance and maintenance phase when no longer required to support the site mission.
- Operation of the ETF must be consistent with the information and limits contained in the Notice of Construction (NOC) Application DOE/RL No. 93-RPB-056 (EPA) and No. 93-RPS-275 (Phase II).
- Operations and maintenance of the LERF shall be in accordance with the Liquid Effluent Retention Facility Final Hazard Categorization Report, HNF-SD-WM-SAD-040, and the Liquid Effluent Retention Facility Auditable Safety Analysis, HNF-SD-LEF-ASA-002.
- Operation of the LERF must be consistent with the information and limits contained in the Notice of Construction (NOC) Application DOE/RL No. 9001137.
- Operation and maintenance of the ETF shall be in accordance with the Hazard Categorization Report for the 200 Area Effluent Treatment Facility, WHC-SD-C018H-HC-002, and the 200 Area Effluent Treatment Facility Auditable Safety Analysis, HNF-SD-ETF-ASA-001.
- Operation and maintenance of the 300 Area TEDF shall be in accordance with the Hanford 300 Area Treated Effluent Disposal Facility Inventory at Risk Calculations and Safety Analysis, WHC-SD-WM-SAD-025.

- Operation and maintenance of the 340 Waste Handling Facility shall be in accordance with the 340 Waste Handling Facility Interim Safety Basis (ISB), WHC-SD-WM-ISB-003, and the Safety Analysis Report for Packaging (On-Site) LR56H Cask System, HNF-SD-TP-SARP-009.

4.2.2.3.4 Project Safety Authorization Basis/NEPA and Permits

The following safety documentation has been prepared for the Liquid Waste Program facilities.

- Operation and maintenance of the 242-A Evaporator are in accordance with Evaporator/Crystallizer Safety Analysis Report, HNF-SD-WM-SAR-023.
- Operation and maintenance of the LERF are in accordance with HNF-SD-WM-SAD-040, Liquid Effluent Retention Facility Final Hazard Category Determination, and HNF-SD-LEF-ASA-002, 242AL Liquid Effluent Retention Facility Auditable Safety Analysis.
- Operation and maintenance of the ETF are in accordance with WHC-SD-C018H-HC-002, Hazard Categorization Report for the 200 Area Effluent Treatment Facility, and HNF-SD-ETF-ASA-001, 200 Area Effluent Treatment Facility Auditable Safety Analysis.
- A preliminary safety evaluation was completed for the 200 Area TEDF ("Preliminary Safety Evaluation - 200 Area Treated Effluent Disposal Facility, Project W-049H"). The 200 Area TEDF is a general-use facility and safety documentation is not required according to DOE Order 5481.1B, Safety Analysis and Review System.
- Operation and maintenance of the 300 Area TEDF are in accordance with WHC-SD-WM-SAD-025, Hanford 300 Area Treated Effluent Disposal Facility Inventory at Risk Calculations and Safety Analysis.
- Operation and maintenance of the 340 Waste Handling Facility are in accordance with WHC-SD-WM-ISB-003, 340 Waste Handling Facility Interim Safety Basis (ISB), and WHC-SD-TP-SARP-015, Safety Analysis Report for Packaging (On-Site) Double-Shell Tank Car.
- Operation and maintenance of the 307 Retention Basis are in accordance with HNF-SD-WM-SAD-027, Hanford 300 Area Retention Process Sewer Hazard Categorization

NEPA Documentation - The following NEPA documentation has been approved for the Liquid Effluents facilities:

- ERDA-1538, Waste Management Operations Environmental Impact Statement
- DOE/EIS-0113, Hanford Defense Waste Environmental Impact Statement
- DOE/EIS-0189, Tank Waste Remediation System Environmental Impact Statement
- DOE/EIS-0189-SA2, Tank Waste Remediation System Supplement Analysis
- DOE/EIS-0245, Spent Nuclear Fuel from K Basins Environmental Impact Statement
- DOE/EIS-0245-SA1, Spent Nuclear Fuel from K Basins Supplement Analysis
- DOE/EA-0383, Hanford Environmental Compliance Project Environmental Assessment
- DOE/EA-0915, Waste Tank Safety Program Environmental Assessment
- DOE/EA-0980, 300 Area Process Sewer Piping Upgrade and 300 Area Treated Effluent Disposal Facility Discharge to the City of Richland Sewage System
- Various CXs have been generated to support small additions, alterations, and or upgrades to Liquid Effluents facilities.

In addition, a Programmatic EIS has been prepared, DOE/EIS-0200-F, Final Waste Management Programmatic Environmental Impact Statement. As the associated Records of Decision (RODs) are published, they will have various effects on Hanford Site waste management operations. A Hanford Site Solid (Radioactive and Hazardous) Waste Program Environmental Impact Statement, DOE/EIS-0286, is currently in preparation to support the direction provided by DOE/EIS-0200-F.

4.2.2.3.5 Tri-Party Agreement Requirements

- TPA.M.26.5.F Submit to EPA and ecology an evaluation of development status of tritium treatment technology that would be pertinent to the cleanup and management of tritiated waste water (e.g., the 242-a evaporator process condensate liquid effluent) and tritium contaminated groundwater at the hanford site.

Due Date: 8/31/1999.

- TPA.M.26.5.H Submit to EPA and ecology an evaluation of development status of tritium treatment technology that would be pertinent to the cleanup and management of tritiated waste water (e.g., the 242-a evaporator process condensate liquid effluent) and tritium contaminated groundwater at the hanford site.

Due Date: 8/31/2001.

- TPA.M.26.5.J Submit to EPA and ecology an evaluation of development status of tritium treatment technology that would be pertinent to the cleanup and management of tritiated waste water (e.g., the 242-a evaporator process condensate liquid effluent) and tritium contaminated groundwater at the hanford site.

Due Date: 8/31/2003.

- TPA.M.26.5.L Submit to EPA and ecology an evaluation of development status of tritium treatment technology that would be pertinent to the cleanup and management of tritiated waste water (e.g., the 242-a evaporator process condensate liquid effluent) and tritium contaminated groundwater at the hanford site.

Due Date: 8/31/2005.

4.2.2.3.6 Interfaces

TABLE 4-29 Liquid Effluents Interfaces

Project Title	Project Number	Interface
Offsite Landfill	EXTERNAL	Receives 242-A Evaporator Sanitary Solid Waste Receives 300 LEF Sanitary Solid Waste Receives ETF, Sanitary Solid Waste
Columbia River	EXTERNAL	Receives 300 Area TEDF Discharge
Soil Column	EXTERNAL	Receives Treated Liquid Effluent Discharged to 200E SALDS
Hazardous Waste Disposal Contracts	EXTERNAL	Receives 300 TEDF HAZ Receives ETF, HAZ
Tank Farm Operations	RL-TW03	Provides Dilute Tank Waste Provides Tank Farms Treated Liquid Effluent Receives 242-A HLW from Training Runs Receives Concentrated Tank Waste

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TABLE 4-29 Liquid Effluents Interfaces (Continued)

Project Title	Project Number	Interface
Privatization Phase I	RL-TW06	Provides LAW/HLW Plant Phase 1 Deactivation Non-radioactive/Non-dangerous Liquid Effluent Provides LAW/HLW Plant Phase I, Deactivation Waste Water Provides LAW/HLW Plant Phase I, Non-radioactive/Non-dangerous Liquid Effluent Provides LAW/HLW Plant Phase I, Waste Water
Privatization Phase II	RL-TW07	Provides HLW Phase 2 Deactivation Waste Water Provides LAW Phase 2 Deactivation Waste Water Provides LAW Phase 2 Non-radioactive/Non-dangerous Liquid Effluent Provides LAW Phase 2 Waste Water Provides TWRS Ph2 HLW Deactivation WW, Non-radioactive/Non-dangerous Liquid Effluent Provides TWRS Ph2 HLW WW, Non-radioactive/Non-dangerous Liquid Effluent Provides TWRS Priv Ph 2 HLW, Waste Water
Solid Waste Storage & Disposal	RL-WM03	Provides 200 East Mixed Waste Disposal Trench Leachate Provides Mixed Waste Disposal Trench Leachate Receives 300 TEDF CH LLMW I Receives 300 TEDF CH LLW I Receives ETF, CH-LLMW-I Receives ETF, CH-LLW-I
Solid Waste Treatment	RL-WM04	Provides T Plant, Treated Liquid Effluent
Analytical Services	RL-WM06	Provides 222-S Lab Wastewater Receives Analytical Laboratory Samples from 200A-LEF Receives Analytical Laboratory Samples from 242-A Evap Receives In-Field Laboratory Samples from 200A-LEF Receives In-Field Laboratory Samples from 300A-LEF Receives Laboratory Samples from 300A-LEF
Spent Nuclear Fuel Project	RL-WM01	Provides K Basin Deactivation Wastewater Provides K Basin Level Control Water
B-Plant	RL-TP01	Provides B Plant Chemical Sewer
WESF	RL-TP02	Provides WESF Cooling Water and Liquid Effluent
PFP	RL-TP05	Provides PFP Wastewater
Accelerated Deactivation	RL-TP10	Receives Excess 200 Area ETF Receives Excess 200 Area LERF Receives Excess 242-A Evaporator System
324/327 Facility Transition	RL-TP08	Provides 324 Building Process Sewer Industrial Waste Water Transfer Provides 324 Potentially Contaminated Waste Water Provides 327 Building Process Sewer Industrial Waste Water Transfer
Hanford Surplus Facility Prog 300A Revitalization	RL-TP14	Provides 306W Industrial Waste Water Transfers Provides Misc Rad Facility Industrial Waste Water Transfers
300 Area Source Remedial Action	RL-ER03	Receives Excess 307 Liquid Waste Transfer Facility Basins
Groundwater Management	RL-ER08	Provides 200-UP-1 Groundwater Provides Groundwater Monitoring Purgewater
ER Disposal Facility (ERDF)	RL-ER04	Provides ERDF Leachate
PNNL Waste Management	RL-ST01	Provides 306W Industrial Waste Water Transfers Provides 325 Potentially Contaminated Waste Water Provides 326 Building Process Sewer Industrial Waste Water Transfer Provides 326 Potentially Contaminated Waste Water Provides 329 Building Process Sewer Industrial Waste Water Transfer Provides 329 Potentially Contaminated Waste Water Provides 331 Complex Industrial Waste Water Transfer Provides 338 Industrial Waste Water Provides Misc Rad Facility Industrial Waste Water Transfers
200W SALDS	EXTERNAL	Receives Treated Liquid Effluents Discharged to 200W SALDS

4.2.2.3.7 Requirements References

- 95-LEP-015, LERF Treatment Exemption"

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- DOE/EIS-0222D, Draft Hanford Remedial Action Environmental Impact Statement and Comprehensive Land Use Plan"
- DOE/RL-89-10, Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement), Revision 5"
- DOE/RL-93-94, Plan and Schedule for Disposition and Regulatory Compliance for Miscellaneous Streams"
- DOE/RL-96-92, Hanford Strategic Plan"
- HNF-SD-W049H-ICD-001, 200 Area Treated Effluent Disposal Facility Interface Control Document"
- HNF-SD-WM-SAD-027, Hanford 300 Area Retention Process Sewer Hazard Categorization"
- ST 4500, State Waste Discharge Permit for the 200 Area ETF"
- ST 4502, State Waste Discharge Permit for the 200 Area TEDF"
- ST 4508, State Waste Discharge Permit for Hydrotest, Maintenance, and Construction Discharges"
- ST 4509, State Waste Discharge Permit for Cooling Water and Condensate Discharges"
- ST 4510, State Waste Discharge Permit for Industrial Storm Water Discharges"
- WA-002591-7, National Pollutant Discharge Elimination System Permit for the 300 Area TEDF"
- WA780008967, Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit"
- WAC 173-218, Underground Injection Control Program"
- WHC-SD-WM-SAR-023, 242-A Evaporator/Crystallizer Safety Analysis Report"

4.2.2.4 Analytical Services

4.2.2.4.1 Project Description Summary

The Hanford Analytical Services Project supports the Hanford mission by providing analytical services to site programs. These services include waste and environmental sample analysis, process control support, field and sampling services, development services and site expertise in chemistry and data quality. The Analytical Services Project operates on-site analytical laboratories, contracts commercial services, establishes site laboratory quality standards, and integrates all Hanford analytical services. Cost effective, quality and timely services are provided utilizing a combination of government-contracted and commercial capabilities based on biannual site projections.

4.2.2.4.2 Life-Cycle Material and Waste Flow

Table 4-30 Analytical Services Waste/Material Flow (Out)

Major Facility	Category	Period	Value	Units
222-S Laboratory	Asbestos	2000 - 2025	52.0	cubic meters
	CH LLMW I	2000 - 2035	1700	cubic meters
	CH LLMW III	2000 - 2035	562.0	cubic meters
	CH LLW I	2000 - 2035	2230	cubic meters
	CH LLW III	2000 - 2035	2230	cubic meters
	HAZ	2000 - 2035	490.0	cubic meters
	HLW	2000 - 2018	953.0	cubic meters
	Sanitary Solid Waste	2000 - 2034	26200	cubic meters
	Treated Liquid Effluent	2000 - 2035	165000	cubic meters

Table 4-30 Analytical Services Waste/Material Flow (Out) (Continued)

Major Facility	Category	Period	Value	Units
WSCF	CH LLMW I	2000 - 2046	483.0	cubic meters
	CH LLW I	2000 - 2046	483.0	cubic meters
	HAZ	2000 - 2046	5.79	cubic meters
327 Facility	CH LLMW I	2000 - 2006	10.5	cubic meters
	CH LLMW III	2000 - 2007	63.1	cubic meters
	CH LLW I	2000 - 2007	147.0	cubic meters
	CH LLW III	2000 - 2007	143.0	cubic meters
	CH TRU	2000 - 2007	12.5	cubic meters

4.2.2.4.3 Facility Life-Cycle Requirements

- Requirements
 - Facilities discharging to the 200 Area TEDF shall implement Best Available Technology (BAT)/All Known, Available, and Reasonable Treatment (AKART). The generator shall provide the information required by WAC 173-240, Submission of Plans and Reports for Construction of Waste Water Facilities.
 - Environmental support facilities shall be operated and maintained and provided in a safe, secure, environmentally sound, and cost-effective manner. This requirement includes provision of calibrations laboratory services

- HANFORD ANALYTICAL SERVICES.

The Contractor shall:

(1) Manage and integrate the Hanford Analytical Services to provide analytical, field support, process development services, and optimize the use of a combination of onsite and offsite analytical laboratories. Support and assist Hanford programs and projects in determining and consolidating requirements for analytical services; provide guidance on analytical capabilities and limitations; facilitate the use of Data Quality Objectives; ensure user data quality requirements are met; and provide guidance in interpretation and evaluation of analytical results.

(2) Consolidate sample management and evaluate forecasted sitewide analytical requirements to assure laboratory core competencies, capabilities, and capacities are maintained and available to meet program needs. The management and evaluation function shall be independent of the administration of the onsite laboratories and of the administration of contracts with offsite laboratories. Oversee analytical laboratory operations to assure safe and effective use of resources, conformance to conduct of operations requirements, and sound environmental practices.

(3) Conduct a self-assessment program using performance measurements and customer feedback to measure the quality, timeliness, and cost effectiveness of analytical services support, and to provide the basis for continued improvements in services.

(4) Provide site-wide integration in the development and adoption of Data Quality Objectives (DQO) methodology to determine sampling and analytical requirements for characterization of wastes, facility processing data, and environmental monitoring. Obtain regulator approval of DQO methodology where necessary to demonstrate compliance with legal requirements to provide physical and chemical properties necessary for project execution.

- Planning Assumptions

- The Hanford Site Infrastructure shall be optimized.
Develop cost-competitive infrastructure commensurate with mission needs.
Involve staff and community in the outsourcing process to assure the most cost competitive infrastructure.
- Central Plateau facilities shall be maintained within the approved safety envelope
- The Waste Sampling and Characterization Facility (WSCF) complex shall be operated and maintained within the approved safety envelope
- 222-S shall be operated and maintained within the approved safety envelope.

4.2.2.4.4 Project Safety Authorization Basis/NEPA and Permits

The results of the hazards analysis are reported in WHC-SD-CP-ISB-002, 222-S Laboratory Interim Safety Basis.

4.2.2.4.5 Tri-Party Agreement Requirements

- None

4.2.2.4.6 Interfaces

TABLE 4-31 Analytical Services Interfaces

Project Title	Project Number	Interface
Offsite Landfill	EXTERNAL	Receives AN SRVCS Solid Sanitary Waste Receives AN SRVCS, Asbestos
Hazardous Waste Disposal Contracts	EXTERNAL	Receives 222-S Lab Hazardous Waste Receives HAZ from Analytical Laboratory Receives WSCF, HAZ
Tank Waste Characterization	RL-TW01	Provides DST Samples Provides SST Samples
Tank Farm Operations	RL-TW03	Provides Analytical Laboratory Samples from TWRS Provides In-Field Laboratory Samples from TWRS Receives Liquid Waste From 222-S Lab to West Area DSTs Receives Waste from 222-S Lab to 204-AR
Solid Waste Storage & Disposal	RL-WM03	Provides Analytical Laboratory Samples from 200-SWM Provides In-Field Laboratory Samples from 200-SWM Receives 327 Facility, CH LLMW I Receives 327 Facility, CH LLW I Receives 327 Facility, CH-LLMW-III Receives 327 Facility, CH-LLW-III Receives 327 Facility, CH-TRU Receives ANALYT LAB, CH-LLMW-I Receives ANALYT LAB, CH-LLMW-III Receives ANALYT LAB, CH-LLW-I Receives ANALYT LAB, CH-LLW-III Receives WSCF, CH-LLMW-I Receives WSCF, CH-LLW-I
Solid Waste Treatment	RL-WM04	Provides Analytical Laboratory Samples from 200-TP Provides Analytical Laboratory Samples from 200-WRAP Provides In-Field Laboratory Samples from 200-TP Provides In-Field Laboratory Samples from 200-WRAP
Liquid Effluents	RL-WM05	Provides Analytical Laboratory Samples from 200A-LEF Provides Analytical Laboratory Samples from 242-A Evap Provides In-Field Laboratory Samples from 200A-LEF Provides In-Field Laboratory Samples from 300A-LEF Provides Laboratory Samples from 300A-LEF Receives 222-S Lab Wastewater
Spent Nuclear Fuel Project	RL-WM01	Provides Analytical Laboratory Samples from SNF Provides In-Field Laboratory Samples from SNF Provides Spent nuclear fuel analytical samples. Receives Analyzed K-Basin spent nuclear fuel samples Receives Bioassay and Dosimetry Services for SNF
WESF	RL-TP02	Receives Analytical Laboratory Samples from WESF
PFP	RL-TP05	Provides Analytical Laboratory Samples from PFP
Accelerated Deactivation	RL-TP10	Provides Analytical Laboratory Samples from 200-TP Provides Deactivated 222-S Laboratory Provides In-Field Laboratory Samples from 200-TP Provides Stabilized 222-S Laboratory Receives Safe & Compliant Deactivated 222-S Laboratory Facility Receives Safe & Compliant Excess 222-S Laboratory Facility Receives Safe & Compliant Stabilized 222-S Laboratory Facility
324/327 Facility Transition	RL-TP08	Receives Excess 327 Facility
100 Area Source Remedial Action	RL-ER01	Provides Analytical Laboratory Samples from Environmental Restoration

TABLE 4-31 Analytical Services Interfaces (Continued)

Project Title	Project Number	Interface
Decontamination & Decommissioning	RL-ER06	Receives Safe & Compliant Deactivated 222-S Laboratory Facility Receives Safe & Compliant Deactivated WSCF Lab

4.2.2.4.7 Requirements References

- DOE/RL-96-92, Hanford Strategic Plan"
- ST 4502, State Waste Discharge Permit for the 200 Area TEDF"